Active Kids Healthy Kids

Background Paper

Nova Scotia Physical Activity Strategy for Children and Youth

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NOVA SCOTIA
Sport and Recreation Commission

Introduction

To support the development of a Physical Activity Strategy for children and youth in Nova Scotia, this background paper provides evidence of what is known about physical activity levels of children and youth.

Evidence is presented on:

- why Nova Scotia is developing a physical activity strategy for children and youth
- the benefits of physical activity in children and youth
- current physical activity levels of children and youth in Canada
- physical activity levels required to see benefits
- evidence on factors which influence children and youth physical activity levels
- conclusions

Why is Nova Scotia developing a Physical Activity Strategy for Children and Youth?

The Canadian Fitness and Lifestyle Research Institute (CFLRI) estimates that 69% of Nova Scotia adults are not active enough for health benefits, and the same is true for children and youth. The National Population Health Survey[1] reports that girls, particularly teenage girls, are much less active than boys. Sedentary lifestyles are becoming the norm, and child obesity levels are rising at an alarming rate. The Canadian Medical Association Journal (CMAJ) states that child obesity is "tightly related to sedentariness, hours of television watched and the number of cars per household.".[2] A second CMAJ article states that, from 1981 to 1996, the prevalence of overweight increased by 92% in boys, and by 57% in girls.[3]

Why should Nova Scotia focus on children and youth?

Evidence shows inactive kids tend to become inactive adults. The three primary reasons for focusing on children and youth are:

1. To maximize their fitness, health and well-being
2. To develop active lifestyles in young people that will be maintained in adulthood
3. To reduce the risk of chronic disease in adulthood

While knowledge on physical activity of adults is substantial, that on the physical activity of children and youth is far less extensive. By knowing the current levels of physical activity of children and youth in Nova Scotia, we can then explore how inactivity may impact their current health, and their health as future adults. Evidence demonstrates that there are signs for concern in the areas of: sedentary lifestyles; low physical activity participation rates; and, the correlation of inactivity to chronic disease and overall wellness.

The Health Education Authority in the United Kingdom, in a policy framework on physical activity for children and youth, notes the possible benefits of physical activity in

youth to be: psychological well-being, self-esteem, social development and crime prevention, weight and obesity reduction, and prevention of chronic disease risk factors.[4]

Also, it is clear the financial cost of inactivity is considerable. A recent study by York University[5] found that "about $2.1 billion, or 2.5% of the total direct health care costs in Canada, were attributable to physical inactivity in 1999." According to the Canadian Medical Association, obesity alone costs the Nova Scotia government $120 million a year in direct health care costs (including $24 million for the treatment of hypertension), and $140 million in indirect costs, primarily in lost productivity.[6]

In light of the cost of physical inactivity and the anticipated benefits of a physically active population, federal and provincial ministers made a commitment in 1997 to lower overall Canadian physical inactivity levels across the country. In support of the national goal, the Nova Scotia Government committed to making physical activity for children and youth a provincial priority.

The provincial government's goal is to reduce the number of physically inactive children by 10% by the year 2005. To achieve this goal, the province committed to creating a provincial Physical Activity Strategy for Children and Youth that involves governments, communities and organizations working together to encourage Nova Scotians to increase their activity levels.[7]

Evidence on the benefits of physical activity in children and youth

Much more information is available on how inactivity affects adults than on how it affects children and youth. Recently, concerns about youth inactivity has prompted researchers to look closer at the subject. Studies available point towards numerous health benefits when inactivity is reduced, and documented benefits can be found in three landmark works: the United Kingdom's *Young and Active*;[8] the 1996 US *Surgeon General's Report*;[9] and the Province of Quebec's Physical Activity, *A Determinant of Health*.[10] Each study reports almost identical findings on the possible benefits of reduced inactivity, such as

- Reduced risk of chronic disease - heart disease, stroke and hypertension; non insulin-dependent diabetes; osteoporosis; and colon cancer
- Improved social interaction skills
- Reduced incidence of overweight and obesity
- Improved lipid profile, blood pressure, and cardiovascular fitness
- Good mental health, especially self-esteem
- Psychological well-being - reduced stress and depression
- Additional time spent in physical education does not interfere with academic performance

Evidence on current physical activity levels of children and youth in Canada

CFLRI studies levels of activity in all segments of the Canadian population. Currently, it reports that three out of five youth aged 5 to 17 years are not active enough for optimal growth and development. The information is based on interviews with parents, which may not accurately reflect activity levels.

In a 1998 study[11], Statistics Canada and Sport Canada report that more than half (54%) of the estimated 4.1 million children aged 5 to14 years were active in sport. Although research shows that children and youth who participate in sport are more physically active, we need information on the frequency, duration and intensity levels of activity associated with organized and unorganized sport to be able to document specific health benefits.

Another study of youth and physical activity by the National Population Health Survey (NPHS)[12], involves a longitudinal household-based survey conducted every two years by Statistics Canada. The child/youth is asked to self-report. Self-report data has its limitations as children and youth tend to over- or underestimate their activity. Moreover, the study only looks at leisure time physical activity. For the purpose of this study, "active" is considered as the expenditure of greater or equal to 3.0 Cal/kg/day - equivalent to accumulating an hour of brisk walking each day.

Comparing the last three NPHS studies over the past six years, physical activity levels have not changed significantly. The percentage of youth not active enough to gain health benefits from their levels of activity remains exceedingly high, with close to half of the nation's youth not active enough to benefit from their participation in physical activity (refer to Table 1).

Table 1. Youth Aged 12 to14 reporting level of physical activity based on their response to NPHS questions about frequency, duration and intensity of their participation in leisure-time physical activity.

Year	% Active enough for benefits	% not active enough for benefits	No response
1998-99 Total	39.7	45.5	14.8
Male	41.3	43.6	15.1
Female	37.9	47.6	14.5
97. Total	39.6	51.4	9.0
Male	47.7	40.6	11.8
Female	31.4	62.3	6.3
95. Total	38.1	47.3	14.5
Male	44.8	40.2	15.0
Female	30.6	55.5	13.9

***Adapted from NPHS findings. Nova Scotia specific data was not available from this study.**

Table 2. Youth aged 15 to19 reporting level of physical activity based on their response to NPHS questions about frequency, duration and intensity of their participation in leisure-time physical activity.

Year	% Active enough for benefits	% not active enough for benefits	No response
1998-99 Total	38.6	58.0	3.4
Male	45.1	49.8	5.0
Female	31.9	66.4	0
97. Total	38.0	59.5	2.6
Male	46.6	50.2	3.1
Female	28.8	69.1	2.1
95. Total	35.1	56.7	8.2
Male	44.4	45.1	10.5
Female	25.2	69.0	5.8

***Adapted from NPHS findings. Nova Scotia specific data was not available from this study.**

In both tables, it is evident that young girls are much less active than boys. This is supported by the Sallis, Prochaska and Taylor's systematic review of 108 studies that notes in "81% of comparisons, boys were more active than girls."[13]

Studies conducted in Quebec indicate a "gradual withdrawal from physical activity between the ages 11 and 16." The Quebec Sports and Leisure Secretariat, Ministry of Health and Social Services, found that membership in Quebec Sports Federations "increases until the age of 15 for girls and 14 for boys, then decreases considerably."[14]

While there is cause for concern in Quebec youth, the concern increases when considering Nova Scotia's youth. For example, in the recent *CTV News* and *Globe and Mail* special report on the *Fittest and Fattest*, adults in rural Nova Scotia are toted as the least active in Canada.[15] Furthermore, while we know that physical education contributes to overall physical activity levels of children, according to the Nova Scotia Department of Education, in senior high school only 16.9% of Grade 10's, 11.5% of Grade 11's, and 15% of Grade 12's were enrolled in non-compulsory physical education during the 2000-2001 academic year.

Because of the limited objective data available on youth physical activity in Nova Scotia, the Nova Scotia Government, through the Sport and Recreation Commission, has committed to conducting a provincial study using accelerometers. This is a first ever population study using an objective instrument. The aim of the study is to identify the percentage of Nova Scotia children and youth who meet the standard of accumulating 60 minutes of moderate physical activity on a daily basis. Results of the study are expected in the spring of 2002. (See the Sport and Recreation Commission Web site www.gov.ns.ca/src for further information).

Evidence on physical activity levels required to see benefits

The recommended physical activity levels for children and youth for optimal health benefits are still evolving - a consensus on the recommended levels does not exist at present. With a national guideline for physical activity and youth expected to be released by Health Canada in 2002, here is a review of the standards developed in Nova Scotia, the United Kingdom, and the United States.

Nova Scotia

The Nova Scotia Sport and Recreation Commission, along with other government departments, and with the collaboration of Dalhousie University's School of Health and Human Performance and other universities in the Maritime region held a Consensus Forum in April 1999. The conference was guided by one of the world's leading authorities on children's physical activity, Dr. James Sallis, San Diego State University. At the Forum, the following standard was recommended to ensure that children and youth receive health benefits:

"Accumulate 60 minutes of moderate physical activity within each 24 hour period"

"Nevertheless, it must be recognized that every minute of physical activity makes some contribution to health."

*The full report of this forum is available on-line at http://www.gov.ns.ca/src/initiatives_pacy.htm.

The word "accumulate" means physical activity can be done in short time periods throughout the day and still have benefits. Examples of moderate physical intensity activities include brisk walking, cycling, swimming, dancing and most sports.

United Kingdom

The United Kingdom produced a similar recommendation in their Health Education Authority publication *Youth and Active?*. They recommended an "average of one hour of physical activity per day."[16] The rationale for the recommendation stemmed from findings showing that while the majority of youth were meeting the 30 minute criterion most days of the week, there was still an overall rise in the number of overweight and obese children, with many possessing at least one modifiable coronary heart disease risk factor or psychological distress.

United States

The International Consensus Conference on 'Physical Activity Guidelines for Adolescents' developed two guidelines in 1994.[17]

- All adolescents should be physically active daily, or nearly every day, as a part of play, games, sports, work, transportation, recreation, physical education or planned exercise, in the context of family, school and community activities.

- Adolescents should engage in three or more sessions per week of activities that last 20 minutes or more at a time and that require moderate to vigorous levels of exertion.

Evidence of factors which influence children and youth physical activity levels

Parent Beliefs

In 1999, the Canadian Fitness and Lifestyle Research Institute[18] conducted a telephone survey of 250 parents in Nova Scotia, and asked them what they felt would help their children to be more active. In Nova Scotia 61% (Canada 62%) of parents who responded felt providing daily physical education would help; 58% of Nova Scotia parents surveyed suggested teaching respect and fair play would help (Canada 48%); and, 52% of Nova Scotia parents suggested providing more opportunities at school (Canada 55%). (See Appendix 1.)

Summary of Evidence

The following summary of evidence is based on four major studies and reviews including : Sallis, Prochaska and Taylor[19]; *Young and Active*? United Kingdom[20]; the Centres for Disease Control[21]; and the *Youth Physical Activity Model*[22] developed by the Cooper Institute.

Higher levels of physical activity are associated with ...

- being male
- white, ethnic majorities
- children and younger adolescents
- personal intention to be active
- confidence in their abilities
- a preference for physical activity
- having parents, siblings who are supportive
- coaches, teachers and peers who are supportive
- access to transportation, and assistance with costs and expenses associated with physical activity
- being active after school and on weekends
- time spent outdoors, particularly for younger children
- access to structured and unstructured activities
- access to programs and facilities
- healthy diet
- a physical education curriculum which allows for lots of physical activity, with increased time being active, and allows for different skill levels

Conclusions

While this background paper reveals what is known about physical activity based on research, it also reveals that much remains unknown - especially about children and physical activity.

At the same time, lack of evidence does not mean interventions do not work - only that, perhaps, the interventions have not been researched sufficiently. Nevertheless, the increasing numbers of physically inactive children and youth in Nova Scotia should concern us all.

For government to serve Nova Scotians in a meaningful way, future strategies and interventions need to be based on evidence-based research. It is obvious from what we know at this time, that there is no single strategy that will be effective in increasing physical activity levels of children and youth in Nova Scotia. To make a difference, solutions require multiple interventions, and require co-operative effort in the home, school and community.

Appendix 1

Parent Opinion on What Would Help Their Children to be More Active

	% strongly agree	
	NOVA SCOTIA	CANADA
Provide Daily Physical Education	61	62
Teach Respect and Fair Play		58	48
Provide More Opportunities at School		52	55
Emphasize Participation Over Winning		43	44
Drop or Reduce User Fees	41	35
Provide a Wide Variety of Activities		41	37
Provide More Family Oriented Programs		41	37
Maintains a Well Linked Network of Trails and Paths	39	33
Provide Incentives (i.e. certificates for attendance/completion)	37	33
Provide Services that Link People Up		37	34
Provide Affordable Instruction or Coaching	36	37
Provide Rewards	-	31
Subsidize Health or Fitness Club Memberships		-	39
Provide Information via a Toll Free Number	-	29
Provide Information via the Media or Internet		-	20
Provide Outreach Programs		-	31
Provide Supportive Facilities/Showers/Bike Racks/Lockers	-	25
Provide Ski Racks/Bike Carriers on Public Transit	-	19

* Source: Canadian Fitness and Lifestyle Research Institute , 1999 Physical Activity Monitor
Based on telephone interviews with 250 randomly selected adults in Nova Scotia.

References

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